```
> percentcows<- rep(c(rep(c(7.2),times=3),rep(c(14.7),times=3),rep(c(22.2),times=3)),times=54)
>
percentkiwi<-rep(rep(c(rep(c(8),times=1),rep(c(10),times=1),rep(c(12),times=1)),times=3),times=
54)
>
milkflavour<-c(7,5,5,5,3,3,7,3,3,4,5,4,5,7,6,8,5,5,5,7,5,7,2,2,5,2,5,9,7,6,7,4,8,4,5,6,5,7,5,7,8,9,7,4,
2,8,8,5,6,6,6,8,6,7,5,8,7,7,6,6,3,3,6,6,7,7,5,6,7,7,7,6,7,7,7,7,7,7,6,7,7,9,8,7,8,8,8,8,8,9,8,9,8,8,7,8,
7,8,8,8,7,8,6,9,7,7,6,5,5,5,7,6,5,6,4,6,7,8,7,8,6,7,7,7,6,7,8,7,8,8,8,8,8,8,7,8,8,7,7,7,5,5,6,7,8,8,7,8,
8,8,8,8,8,6,8,6,5,7,4,6,4,3,6,8,7,8,7,8,7,7,6,6,7,6,7,8,8,8,7,7,7,7,8,8,7,7,7,7,7,7,6,6,6,6,6,6,7,7,9,8,
8,7,6,7,7,7,8,8,6,2,9,4,4,6,4,3,7,6,7,7,4,8,8,5,7,8,6,7,6,7,7,6,8,4,9,9,9,9,7,8,7,7,8,7,6,6,7,7,6,6,6,6,
8,9,8,9,8,8,8,8,8,4,7,3,9,9,8,9,9,7,7,6,6,6,6,6,7,7,7,4,6,6,6,4,4,6,4,6,5,6,6,8,8,6,7,7,6,9,8,8,8,9,9,9,
9,8,6,6,7,7,7,6,7,7,6,4,6,5,7,6,6,7,8,8,2,6,7,8,7,5,6,7,1,4,8,7,6,8,8,6,3,6,6,6,8,8,3,7,3,4,5,6,5,7,6,4,
6,5,6,5,5,8,6,7,6,7,6,5,5,4,3,7,6,4,4,3,6,3,3,6,5,4,5,6,6,6,6,8,7,4,8,6,7,5,7,4,4,4,4,3,4,4,4,4,3,3,3,2,
7,8,6,4,6,2,8,8,8,8,9,9,9,8,8,8,7,6,8,7,5,7,6,6,7,8,7,6,6,5,8,7,5,5,6,4,5,4,4,5,5,4,6,6,5,7,8,6,8,7,5,5,
8,8,8,6,7,7,7,7,8,7,8,7,8,7,7,8,8,3,4,4,6,5,4,4,3,2)
>yoghurt<-data.frame(percentcows=factor(percentcows),percentkiwi=factor(percentkiwi),milkfla
vour)
> yoghurt
```

	percentcows	percentkiwi	milkflavour
1	7.2	8	7
2	7.2	10	5
3	7.2	12	5
4	14.7	8	5
5	14.7	10	3
6	14.7	12	3
7	22.2	8	7
8	22.2	10	3
9	22.2	12	3
10	7.2	8	4
11	7.2	10	5
12	7.2	12	4
13	14.7	8	5
14	14.7	10	7
15	14.7	12	6
16	22.2	8	8
17	22.2	10	5
18	22.2	12	5
19	7.2	8	5
20	7.2	10	7
21	7.2	12	5
22	14.7	8	7
23	14.7	10	2
24	14.7	12	2
25	22.2	8	5

26	22.2	10	2
27	22.2	12	5
28	7.2	8	9
29	7.2	10	7
30	7.2	12	6
31	14.7	8	7
32	14.7	10	4
33	14.7	12	8
34	22.2	8	4
35	22.2	10	5
36	22.2	12	6
37	7.2	8	5
38	7.2	10	7
39	7.2	12	5
40	14.7	8	7
41	14.7	10	8
42	14.7	12	9
43	22.2	8	7
44	22.2	10	4
45	22.2	12	2
46	7.2	8	8
47	7.2	10	8
48	7.2	12	5
49	14.7	8	6
50	14.7	10	6
51	14.7	12	6
52	22.2	8	8
53	22.2	10	6
54	22.2	12	7
55	7.2	8	5
56	7.2	10	8
57	7.2	12	7
58	14.7	8	7
59	14.7	10	6
60	14.7	12	6
61	22.2	8	3
62	22.2	10	3
63	22.2	12	6
64	7.2	8	6
65	7.2	10	7
66	7.2	12	7
67	14.7	8	5
68	14.7	10	6
69	14.7	12	7

70	22.2	8	7
71	22.2	10	7
72	22.2	12	6
73	7.2	8	7
74	7.2	10	7
75	7.2	12	7
76	14.7	8	7
77	14.7	10	7
78	14.7	12	7
79	22.2	8	6
80	22.2	10	7
81	22.2	12	7
82	7.2	8	9
83	7.2	10	8
84	7.2	12	7
85	14.7	8	8
86	14.7	10	8
87	14.7	12	8
88	22.2	8	8
89	22.2	10	8
90	22.2	12	9
91	7.2	8	8
92	7.2	10	9
93	7.2	12	8
94	14.7	8	8
95	14.7	10	7
96	14.7	12	8
97	22.2	8	7
98	22.2	10	8
99	22.2	12	8
100	7.2	8	8
101	7.2	10	7
102	7.2	12	8
103	14.7	8	6
104	14.7	10	9
105	14.7	12	7
106	22.2	8	7
107	22.2	10	6
108	22.2	12	5
109	7.2	8	5
110	7.2	10	5
111	7.2	12	7
112	14.7	8	6
113	14.7	10	5

114	14.7	12	6
115	22.2	8	4
116	22.2	10	6
117	22.2	12	7
118	7.2	8	8
119	7.2	10	7
120	7.2	12	8
121	14.7	8	6
122	14.7	10	7
123	14.7	12	7
124	22.2	8	7
125	22.2	10	6
126	22.2	12	7
127	7.2	8	8
128	7.2	10	7
129	7.2	12	8
130	14.7	8	8
131	14.7	10	8
132	14.7	12	8
133	22.2	8	8
134	22.2	10	8
135	22.2	12	7
136	7.2	8	8
137	7.2	10	8
138	7.2	12	7
139	14.7	8	7
140	14.7	10	7
141	14.7	12	5
142	22.2	8	5
143	22.2	10	6
144	22.2	12	7
145	7.2	8	8
146	7.2	10	8
147	7.2	12	7
148	14.7	8	8
149	14.7	10	8
150	14.7	12	8
151	22.2	8	8
152	22.2	10	8
153	22.2	12	8
154	7.2	8	6
155	7.2	10	8
156	7.2	12	6
157	14.7	8	5

158	14.7	10	7
159	14.7	12	4
160	22.2	8	6
161	22.2	10	4
162	22.2	12	3
163	7.2	8	6
164	7.2	10	8
165	7.2	12	7
166	14.7	8	8
167	14.7	10	7
168	14.7	12	8
169	22.2	8	7
170	22.2	10	7
171	22.2	12	6
172	7.2	8	6
173	7.2	10	7
174	7.2	12	6
175	14.7	8	7
176	14.7	10	8
177	14.7	12	8
178	22.2	8	8
179	22.2	10	7
180	22.2	12	7
181	7.2	8	7
182	7.2	10	7
183	7.2	12	8
184	14.7	8	8
185	14.7	10	7
186	14.7	12	7
187	22.2	8	7
188	22.2	10	7
189	22.2	12	7
190	7.2	8	7
191	7.2	10	6
192	7.2	12	6
193	14.7	8	6
194	14.7	10	6
195	14.7	12	6
196	22.2	8	6
197	22.2	10	7
198	22.2	12	7
199	7.2	8	9
200	7.2	10	8
201	7.2	12	8

202	14.7	8	7
203	14.7	10	6
204	14.7	12	7
205	22.2	8	7
206	22.2	10	7
207	22.2	12	8
208	7.2	8	8
209	7.2	10	6
210	7.2	12	2
211	14.7	8	9
212	14.7	10	4
213	14.7	12	4
214	22.2	8	6
215	22.2	10	4
216	22.2	12	3
217	7.2	8	7
218	7.2	10	6
219	7.2	12	7
220	14.7	8	7
221	14.7	10	4
222	14.7	12	8
223	22.2	8	8
224	22.2	10	5
225	22.2	12	7
226	7.2	8	8
227	7.2	10	6
228	7.2	12	7
229	14.7	8	6
230	14.7	10	7
231	14.7	12	7
232	22.2	8	6
233	22.2	10	8
234	22.2	12	4
235	7.2	8	9
236	7.2	10	9
237	7.2	12	9
238	14.7	8	9
239	14.7	10	7
240	14.7	12	8
241	22.2	8	7
242	22.2	10	7
243	22.2	12	8
244	7.2	8	7
245	7.2	10	6

246	7.2	12	6
247	14.7	8	7
248	14.7	10	7
249	14.7	12	6
250	22.2	8	6
251	22.2	10	6
252	22.2	12	6
253	7.2	8	8
254	7.2	10	9
255	7.2	12	8
256	14.7	8	9
257	14.7	10	8
258	14.7	12	8
259	22.2	8	8
260	22.2	10	8
261	22.2	12	8
262	7.2	8	4
263	7.2	10	7
264	7.2	12	3
265	14.7	8	9
266	14.7	10	9
267	14.7	12	8
268	22.2	8	9
269	22.2	10	9
270	22.2	12	7
271	7.2	8	7
272	7.2	10	6
273	7.2	12	6
274	14.7	8	6
275	14.7	10	6
276	14.7	12	6
277	22.2	8	7
278	22.2	10	7
279	22.2	12	7
280	7.2	8	4
281	7.2	10	6
282	7.2	12	6
283	14.7	8	6
284	14.7	10	4
285	14.7	12	4
286	22.2	8	6
287	22.2	10	4
288	22.2	12	6
289	7.2	8	5

290	7.2	10	6
291	7.2	12	6
292	14.7	8	8
293	14.7	10	8
294	14.7	12	6
295	22.2	8	7
296	22.2	10	7
297	22.2	12	6
298	7.2	8	9
299	7.2	10	8
300	7.2	12	8
301	14.7	8	8
302	14.7	10	9
303	14.7	12	9
304	22.2	8	9
305	22.2	10	9
306	22.2	12	8
307	7.2	8	6
308	7.2	10	6
309	7.2	12	7
310	14.7	8	7
311	14.7	10	7
312	14.7	12	6
313	22.2	8	7
314	22.2	10	7
315	22.2	12	6
316	7.2	8	4
317	7.2	10	6
318	7.2	12	5
319	14.7	8	7
320	14.7	10	6
321	14.7	12	6
322	22.2	8	7
323	22.2	10	8
324	22.2	12	8
325	7.2	8	2
326	7.2	10	6
327	7.2	12	7
328	14.7	8	8
329	14.7	10	7
330	14.7	12	5
331	22.2	8	6
332	22.2	10	7
333	22.2	12	1

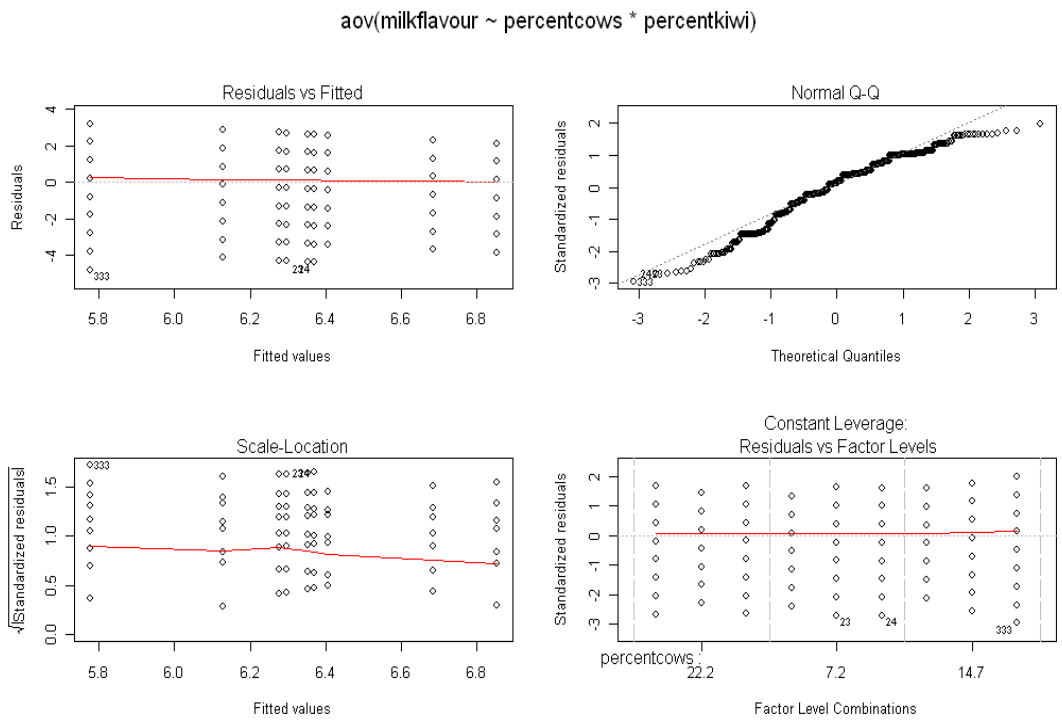
334	7.2	8	4
335	7.2	10	8
336	7.2	12	7
337	14.7	8	6
338	14.7	10	8
339	14.7	12	8
340	22.2	8	6
341	22.2	10	3
342	22.2	12	6
343	7.2	8	6
344	7.2	10	6
345	7.2	12	8
346	14.7	8	8
347	14.7	10	3
348	14.7	12	7
349	22.2	8	3
350	22.2	10	4
351	22.2	12	5
352	7.2	8	6
353	7.2	10	5
354	7.2	12	7
355	14.7	8	6
356	14.7	10	4
357	14.7	12	6
358	22.2	8	5
359	22.2	10	6
360	22.2	12	5
361	7.2	8	5
362	7.2	10	8
363	7.2	12	6
364	14.7	8	7
365	14.7	10	6
366	14.7	12	7
367	22.2	8	6
368	22.2	10	5
369	22.2	12	5
370	7.2	8	4
371	7.2	10	3
372	7.2	12	7
373	14.7	8	6
374	14.7	10	4
375	14.7	12	4
376	22.2	8	3
377	22.2	10	6

378	22.2	12	3
379	7.2	8	3
380	7.2	10	6
381	7.2	12	5
382	14.7	8	4
383	14.7	10	5
384	14.7	12	6
385	22.2	8	6
386	22.2	10	6
387	22.2	12	6
388	7.2	8	8
389	7.2	10	7
390	7.2	12	4
391	14.7	8	8
392	14.7	10	6
393	14.7	12	7
394	22.2	8	5
395	22.2	10	7
396	22.2	12	4
397	7.2	8	4
398	7.2	10	4
399	7.2	12	4
400	14.7	8	3
401	14.7	10	4
402	14.7	12	4
403	22.2	8	4
404	22.2	10	4
405	22.2	12	3
406	7.2	8	3
407	7.2	10	3
408	7.2	12	2
409	14.7	8	7
410	14.7	10	8
411	14.7	12	6
412	22.2	8	4
413	22.2	10	6
414	22.2	12	2
415	7.2	8	8
416	7.2	10	8
417	7.2	12	8
418	14.7	8	8
419	14.7	10	9
420	14.7	12	9
421	22.2	8	9

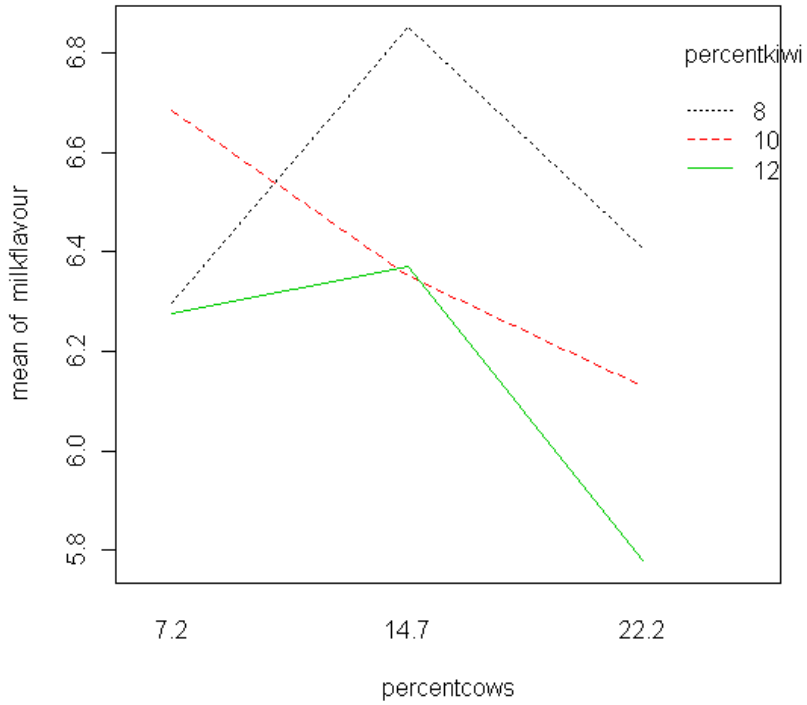
422	22.2	10	8
423	22.2	12	8
424	7.2	8	8
425	7.2	10	7
426	7.2	12	6
427	14.7	8	8
428	14.7	10	7
429	14.7	12	5
430	22.2	8	7
431	22.2	10	6
432	22.2	12	6
433	7.2	8	7
434	7.2	10	8
435	7.2	12	7
436	14.7	8	6
437	14.7	10	6
438	14.7	12	5
439	22.2	8	8
440	22.2	10	7
441	22.2	12	5
442	7.2	8	5
443	7.2	10	6
444	7.2	12	4
445	14.7	8	5
446	14.7	10	4
447	14.7	12	4
448	22.2	8	5
449	22.2	10	5
450	22.2	12	4
451	7.2	8	6
452	7.2	10	6
453	7.2	12	5
454	14.7	8	7
455	14.7	10	8
456	14.7	12	6
457	22.2	8	8
458	22.2	10	7
459	22.2	12	5
460	7.2	8	5
461	7.2	10	8
462	7.2	12	8
463	14.7	8	8
464	14.7	10	6
465	14.7	12	7

466	22.2	8	7
467	22.2	10	7
468	22.2	12	7
469	7.2	8	8
470	7.2	10	7
471	7.2	12	8
472	14.7	8	7
473	14.7	10	8
474	14.7	12	7
475	22.2	8	7
476	22.2	10	8
477	22.2	12	8
478	7.2	8	3
479	7.2	10	4
480	7.2	12	4
481	14.7	8	6
482	14.7	10	5
483	14.7	12	4
484	22.2	8	4
485	22.2	10	3
486	22.2	12	2

```
> yoghurt.aov<-aov(milkflavour~percentcows*percentkiwi,yoghurt)
> summary(yoghurt.aov)
                            Df  Sum Sq Mean Sq F value  Pr(>F)
percentcows                  2   15.46  7.7305  2.8991 0.05604 .
percentkiwi                  2   11.86  5.9280  2.2231 0.10939
percentcows:percentkiwi      4   13.29  3.3230  1.2462 0.29046
Residuals                  477 1271.93  2.6665
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
> oldpar <- par(oma=c(0,0,3,0), mfrow=c(2,2))
> plot(yoghurt.aov)
```



> interaction.plot(percentcows,percentkiwi,milkflavour,col=1:486)



```
> TukeyHSD(yoghurt.aov,"percentcows:percentkiwi",conf.level=0.95)
  Tukey multiple comparisons of means
    95% family-wise confidence level

Fit: aov(formula = milkflavour ~ percentcows * percentkiwi, data = yoghurt)

$`percentcows:percentkiwi`
                              diff         lwr        upr     p adj
14.7:8-7.2:8          0.55555556 -0.4237105  1.53482161 0.7034538
22.2:8-7.2:8          0.11111111 -0.8681549  1.09037717 0.9999930
7.2:10-7.2:8          0.38888889 -0.5903772  1.36815494 0.9478146
14.7:10-7.2:8         0.05555556 -0.9237105  1.03482161 1.0000000
22.2:10-7.2:8        -0.16666667 -1.1459327  0.81259939 0.9998431
7.2:12-7.2:8         -0.01851852 -0.9977846  0.96074754 1.0000000
14.7:12-7.2:8         0.07407407 -0.9051920  1.05334013 0.9999997
22.2:12-7.2:8        -0.51851852 -1.4977846  0.46074754 0.7764227
22.2:8-14.7:8        -0.44444444 -1.4237105  0.53482161 0.8921345
7.2:10-14.7:8        -0.16666667 -1.1459327  0.81259939 0.9998431
14.7:10-14.7:8       -0.50000000 -1.4792661  0.47926606 0.8095260
22.2:10-14.7:8       -0.72222222 -1.7014883  0.25704383 0.3452517
7.2:12-14.7:8        -0.57407407 -1.5533401  0.40519198 0.6643346
14.7:12-14.7:8       -0.48148148 -1.4607475  0.49778457 0.8399737
22.2:12-14.7:8       -1.07407407 -2.0533401 -0.09480802 0.0195497
7.2:10-22.2:8         0.27777778 -0.7014883  1.25704383 0.9937320
14.7:10-22.2:8       -0.05555556 -1.0348216  0.92371050 1.0000000
22.2:10-22.2:8       -0.27777778 -1.2570438  0.70148828 0.9937320
7.2:12-22.2:8        -0.12962963 -1.1088957  0.84963643 0.9999770
14.7:12-22.2:8       -0.03703704 -1.0163031  0.94222902 1.0000000
22.2:12-22.2:8       -0.62962963 -1.6088957  0.34963643 0.5416434
14.7:10-7.2:10       -0.33333333 -1.3125994  0.64593272 0.9793482
22.2:10-7.2:10       -0.55555556 -1.5348216  0.42371050 0.7034538
7.2:12-7.2:10        -0.40740741 -1.3866735  0.57185865 0.9321914
14.7:12-7.2:10       -0.31481481 -1.2940809  0.66445124 0.9856478
22.2:12-7.2:10       -0.90740741 -1.8866735  0.07185865 0.0943221
22.2:10-14.7:10      -0.22222222 -1.2014883  0.75704383 0.9986860
7.2:12-14.7:10       -0.07407407 -1.0533401  0.90519198 0.9999997
14.7:12-14.7:10       0.01851852 -0.9607475  0.99778457 1.0000000
22.2:12-14.7:10      -0.57407407 -1.5533401  0.40519198 0.6643346
7.2:12-22.2:10        0.14814815 -0.8311179  1.12741420 0.9999358
14.7:12-22.2:10       0.24074074 -0.7385253  1.22000680 0.9976740
22.2:12-22.2:10      -0.35185185 -1.3311179  0.62741420 0.9711380
14.7:12-7.2:12        0.09259259 -0.8866735  1.07185865 0.9999983
22.2:12-7.2:12       -0.50000000 -1.4792661  0.47926606 0.8095260
22.2:12-14.7:12      -0.59259259 -1.5718586  0.38667346 0.6240244
```